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### TRANSMITTAL FORM FEE TRANSMITTAL FORM APPEAL BRIEF

  
Janice Soulas

Number of Pages (including cover sheet) 13

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**TRANSMITTAL  
FORM**

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

13

Application Number

10/636,148

Filing Date

August 7, 2003

First Named Inventor

Bohling et al.

Art Unit

1711

Examiner Name

Irina S. Zemel

Attorney Docket Number

A01406

**ENCLOSURES**

(Check all that apply)



Fee Transmittal Form



Fee Attached



Amendment/Reply



After Final



Affidavits/declaration(s)



Extension of Time Request



Express Abandonment Request



Information Disclosure Statement



Certified Copy of Priority Document(s)

Reply to Missing Parts/  
Incomplete ApplicationReply to Missing Parts  
under 37 CFR 1.52 or 1.53

Drawing(s)



Licensing-related Papers



Petition

Petition to Convert to a  
Provisional Application

Power of Attorney, Revocation



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Remarks



After Allowance Communication to TC

Appeal Communication to Board  
of Appeals and InterferencesAppeal Communication to TC  
(Appeal Notice, Brief, Reply Brief)

Proprietary Information



Status Letter

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BOARD OF PATENT APPEALS  
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Firm Name

Rohm and Haas Company

Signature

Printed name

Kim R. Jessum

Date

5/16/05

Reg. No.

43,694

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# FEE TRANSMITTAL For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 500.00

## Complete if Known

Application Number 10/636,148  
Filing Date August 7, 2003  
First Named Inventor Bohling et al.  
Examiner Name Irina S. Zemel  
Art Unit 1711  
Attorney Docket No. A01406

## METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): \_\_\_\_\_  
☒ Deposit Account Deposit Account Number: 18-1850 Deposit Account Name: Rohm and Haas Company

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

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☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments

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## FEE CALCULATION

### 1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

### 2. EXCESS CLAIM FEES

#### Fee Description

Each claim over 20 (including Reissues)  
Each independent claim over 3 (including Reissues)  
Multiple dependent claims

Total Claims Extra Claims Fee (\$) Fee Paid (\$)

- 20 or HP = \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_  
HP = highest number of total claims paid for, if greater than 20.

Indep. Claims Extra Claims Fee (\$) Fee Paid (\$)

- 3 or HP = \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_  
HP = highest number of independent claims paid for, if greater than 3.

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Small Entity Fee (\$)
50
25
100
180
Multiple Dependent Claims Fee Paid (\$)

### 3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets Extra Sheets Number of each additional 50 or fraction thereof Fee (\$) Fee Paid (\$)

- 100 = \_\_\_\_\_ / 50 = \_\_\_\_\_ (round up to a whole number) x \_\_\_\_\_ = \_\_\_\_\_

### 4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Appeal Brief

Fees Paid (\$)

500.00

## SUBMITTED BY

Signature Kim R. Jessum Registration No. 43,694 Telephone 215-592-3000  
Name (Print/Type) Date 5/16/05

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GROUP ART UNIT: 1711

APPEAL NO. \_\_\_\_\_

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES**

**APPEAL BRIEF**

In re the Application of BOHLING et al.

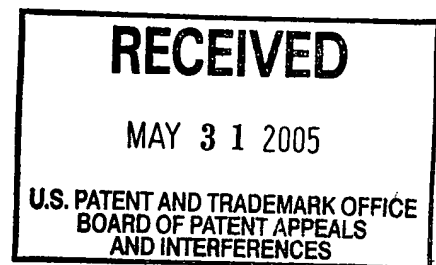
Filed: August 7, 2003

Serial No. 10/636,148

For: RESIN FOR SOLID PHASE SYNTHESIS

Kenneth Crimaldi  
*Attorney for Appellants*

Irina S. Zemel  
*Examiner*



Enclosed:  
Filing Fee via Deposit Account Form (in duplicate)  
Certificate of Mailing

10/636,148  
May 13, 2005

A01406

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**In re application of :** BOHLING et al.

**Application No. :** 10/636,148      **Group No. :** 1711

**Filed :** August 7, 2003      **Examiner :** Irina S. Zemel

**For:** RESIN FOR SOLID PHASE SYNTHESIS

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**APPEAL BRIEF**

This is an appeal from the rejection dated February 23, 2005 finally rejecting claims 1-6 and 8-10. The rejected claims are set out in the Appendix. Appellants filed a Notice of Appeal pursuant to 37 C.F.R. § 1.191 on May 10, 2005.

**(1) Real Party In Interest**

The owner of the present application and the invention contained therein is ROHM AND HAAS COMPANY.

**(2) Related Appeals, Interferences or Judicial Proceedings**

No appeals, interferences or judicial proceedings are known to appellants, the appellants' legal representative, or the assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status Of Claims**

The status of the claims is as follows:

Claims pending: 1-6 and 8-10

Allowed claims: none

Claims objected to: none

Claims rejected: 1-6 and 8-10

Claims on appeal: 1-6 and 8-10

Claims withdrawn from consideration by the Examiner: none.

**(4) Status Of Amendments After-Final Rejection**

Appellants have not filed an amendment after final rejection in the present application.

**(5) Summary Of Invention**

The present invention provides a crosslinked polymeric bead comprising a polymer having from 0.5 mole percent to 2 mole percent crosslinker; wherein said bead has a diameter no greater than 200  $\mu\text{m}$ , no void spaces having a diameter greater than 5  $\mu\text{m}$ , and less than 5 weight percent of organic extractables.

The present invention is further directed to a method for producing a lightly crosslinked polymeric bead having no void spaces having a diameter greater than 5  $\mu\text{m}$ ; said method comprising steps of:

(a) preparing a suspension polymerization mixture in a vessel; said mixture comprising: (i) a monomer mixture comprising at least one vinyl monomer and 0.5 mole percent to 2 mole percent of at least one crosslinker; and (ii) from 0.25 mole percent to 1.5 mole percent of at least one free radical initiator;

(b) removing oxygen from the suspension polymerization mixture and the vessel by introducing an inert gas for a time sufficient to produce an atmosphere in the vessel containing no more than 5 percent oxygen;

- (c) allowing the monomer mixture to polymerize; and
- (d) washing the bead with an aprotic organic solvent.

**(6) Issues Presented for Review on Appeal**

The following issue is present for review on appeal:

Whether or not claims 1-6 and 8-10 are unpatentable under 35 USC § 103(a).

**(7) Argument**

Regarding whether or not claims 1-6, and 8-10 are unpatentable under 35 USC § 103(a) over Meitzner et al. (U.S. Pat. No. 4,486,313; "Meitzner"):

**A. Meitzner Fails to Suggest Several Limitations of the Present Claims**

All claim limitations must be taught or suggested in the prior art. *In re Royka*, 490 F.2d 981 (C.C.P.A. 1974). Limitations of independent claims 1, 6 and 10 are not taught or suggested in Meitzner, namely that the polymeric bead has: (i) from 0.5 mole percent to 2 mole percent crosslinker (all claims); (ii) no void spaces having a diameter greater than 5  $\mu\text{m}$  (all claims); (iii) a diameter no greater than 200  $\mu\text{m}$  (claim 1); and (iv) less than 5 weight percent of organic extractables (claim 1).

1. Regarding limitation (i): Meitzner is directed to preparation of highly crosslinked beads, and teaches use of a minimum crosslinker level of 4 to 6%, with a maximum of 25% (Col. 5, lines 20-30). Meitzner fails to suggest, or even to mention any crosslinker level below 4%. A finding of obviousness under 35 U.S.C. § 103(a) requires that the reference must suggest the desirability of the particular modifications needed to arrive at the claimed invention. *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984). The final rejection states only that it "would have been clearly obvious for an ordinary artisan to achieve desired physical properties of a polymer depending of its end use since it is well known on the art that varying the amount of crosslinker 'has a profound effect on the physical properties of the product'" (page 3). Meitzner's general disclosure that varying crosslinking will result in a change in properties hardly amounts to a suggestion of the

specific range “from 0.5 mole percent to 2 mole percent crosslinker,” much less a suggestion even to vary properties in a direction that could result in Applicants’ invention. Meitzner contains no guidance as to the optimum ranges of crosslinker that would achieve the beads claimed by Applicants; rather, the disclosure is, at most, an invitation to experiment with crosslinker level. The notion that obviousness can result from leaving those skilled in the art to find the claimed invention via undirected experimentation, i.e., that it would be “obvious to try” the claimed parameters, has been rejected repeatedly by the Federal Circuit. *See, e.g., In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

2. Regarding limitation (ii): Meitzner contains no disclosure at all related to beads with “no void spaces having a diameter greater than 5  $\mu\text{m}$ .” The final rejection first attempts to find a suggestion in Meitzner to omit the “precipitant” used to produce macroporous beads, and then the rejection asserts that this would result in a polymer “with no microchannels.” First, Meitzner distinguishes a microchannel produced by precipitant from the micropores that Meitzner states are “present in all crosslinked polymers” (Col. 5, lines 6-9). Thus, Meitzner does not even recognize the possibility of making polymer beads substantially free of micropores (void spaces). Second the alleged suggestion to omit precipitant in Meitzner is cited as occurring at Col. 4, line 61 to Col. 5, line 23. This passage is merely a discussion of the mechanism by which the precipitant produces microchannels, and in no way suggests that it be omitted.

3. Regarding limitations (iii) and (iv): These limitations of claim 1 are not suggested by Meitzner, and since they are not even mentioned in the final rejection, or the first rejection, the Office has not met its burden of demonstrating that the prior art teaches or suggests all the limitations of claim 1. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991).



**B. Meitzner Teaches Away from the Present Claims**

Meitzner is directed to preparation of beads having large pore spaces (macroreticular structure) by incorporating large amounts of "precipitant" (solvent) and a high level of crosslinker, as cited in A.1. above. The first rejection cites Col. 7, line 56 et seq. as suggesting a modification of the cited crosslinker level. However, at Col. 7, lines 57-58, Meitzner says that the amount of crosslinker "may be varied widely within the scope of the present invention." (emphasis added) This qualification strictly limits the teaching of Meitzner to crosslinker amounts of no less than 4%, the lowest level within the scope of Meitzner. The other alleged suggestions to modify crosslinker level, as described in A.1. above, do not negate this specific direction not to use crosslinker levels below 4%. Thus, Meitzner not only does not suggest using smaller amounts of crosslinker, it actually teaches away from doing so.

**C. One Skilled in the Art Would Have Had No Reasonable Expectation of Success**

A prima facie case of obviousness requires that one skilled in the art would have had a reasonable expectation of success in light of the prior art. *In re Dow Chemical*, 837 F.2d 469 (Fed. Cir. 1988). Since, as discussed above, Meitzner contains no guidance as to how to vary the relevant parameters to arrive at the individual claimed limitations, it cannot possibly provide any reasonable expectation of success for the combination. For example, there is no suggestion in Meitzner to lower crosslinker level while also removing the large amounts of precipitant employed by Meitzner. The final rejection cites an experiment in Meitzner in which porogen was omitted (Table II, first entry). However, this experiment was carried out with 20% crosslinker. There is no suggestion anywhere in Meitzner to vary both crosslinker and precipitant levels in combination to prepare a bead having low levels of both. Moreover, Applicants claim beads with no void spaces having a diameter greater than 5  $\mu\text{m}$ . As described above in A.2., Meitzner teaches control of microchannels, but does not even recognize the possibility of reducing micropores in polymers. One skilled in the art certainly could not

acquire a reasonable expectation of eliminating micropores larger than 5  $\mu\text{m}$  from this teaching, but would learn only that the occurrence of microchannels could be controlled, but that micropores are not affected by altering any of the relevant parameters. Moreover, there is no indication that this could be achieved at lower crosslinker levels. In short, there is no guidance in Meitzner that reasonably could lead one skilled in the art to make the presently claimed combination of parameters, or to expect it to work. "It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art." *In re Wesslau*, 353 F.2d 238, 241 (C.C.P.A. 1965). What Meitzner "fairly suggests to one of ordinary skill in the art" is that, in the presence of high levels of crosslinker, precipitant can be added to create microchannels and lower density. Even, assuming *arguendo*, that Meitzner would teach one skilled in the art the individual limitations of the present claims, there is nothing in Meitzner that would provide a reasonable expectation of success in using the particular claimed combination.

**D. Applicants Have Obtained Unexpected Results**

The Declaration of Dr. James C. Bohling, submitted with Applicants' response filed November 15, 2004, demonstrates that beads having 2% crosslinker and a precipitant, according to Meitzner's procedure, do not meet the void space limitation of the present claims. Paragraph 7 of the Declaration summarizes the key points of the Figures therein. Figure 1 shows that beads made according to the present invention are completely free of visible void spaces. In contrast, Figures 2-5 show that beads prepared by the Meitzner method, but at low crosslinker levels, have numerous void spaces larger than 5  $\mu\text{m}$ . The central teaching of Meitzner is the use of precipitants, and there is no suggestion to use lower crosslinker levels or to omit the precipitant. Moreover, Meitzner does not recognize that it would be possible to prepare polymeric beads without micropores larger than 5  $\mu\text{m}$ . Therefore, the improved properties of beads made according to the present invention could not have been predicted from Meitzner.

### CONCLUSION

Based on the foregoing, Appellants respectfully submit that the pending claims are currently in condition for allowance. Appellants respectfully request the Board to pass the pending claims to allowance.

Enclosed herewith, Appellants have filed a Certificate of Mailing to establish the timely filing of this Appeal Brief.

The Commissioner is hereby authorized to charge any additional fee which may be required, or to credit any overpayments to Deposit Account 18-1850.

Respectfully submitted,



Kenneth Crimaldi  
Attorney for Appellants  
Registration No. 40,968

ROHM AND HAAS COMPANY  
100 Independence Mall West  
Philadelphia, PA 19106-2399  
May 13, 2005

## APPENDIX

1. A crosslinked polymeric bead comprising a polymer having from 0.5 mole percent to 2 mole percent crosslinker; wherein said bead has a diameter no greater than 200  $\mu\text{m}$ , no void spaces having a diameter greater than 5  $\mu\text{m}$ , and less than 5 weight percent of organic extractables.
2. The crosslinked polymeric bead of claim 1 in which the polymer has from 0.5% to 1.6% crosslinker and the bead has a diameter no greater than 170  $\mu\text{m}$ .
3. The crosslinked polymeric bead of claim 2 in which the polymer is a styrene polymer with a divinylbenzene crosslinker.
4. The crosslinked polymeric bead of claim 3 in which the polymer has from 0.7 mole percent to 1.2 mole percent crosslinker and the bead has no void spaces having a diameter greater than 3  $\mu\text{m}$ , and less than 3 weight percent of organic extractables.
5. The crosslinked polymeric bead of claim 4 in which the bead has a diameter no greater than 150  $\mu\text{m}$ .
6. A method for producing a lightly crosslinked polymeric bead having no void spaces having a diameter greater than 5  $\mu\text{m}$ ; said method comprising steps of:
  - (a) preparing a suspension polymerization mixture in a vessel; said mixture comprising: (i) a monomer mixture comprising at least one vinyl monomer and 0.5 mole percent to 2 mole percent of at least one crosslinker; and (ii) from 0.25 mole percent to 1.5 mole percent of at least one free radical initiator;
  - (b) removing oxygen from the suspension polymerization mixture and the vessel by introducing an inert gas for a time sufficient to produce an atmosphere in the vessel containing no more than 5 percent oxygen;

- (c) allowing the monomer mixture to polymerize; and
- (d) washing the bead with an aprotic organic solvent.

8. The method of claim 6 in which the atmosphere in the vessel contains no more than 2 percent oxygen.

9. The method of claim 8 in which said at least one vinyl monomer comprises at least 90 mole percent styrene, said at least one crosslinker comprises divinylbenzene, and the bead has a diameter no greater than 200  $\mu\text{m}$ .

10. A lightly crosslinked polymeric bead having no void spaces having a diameter greater than 5  $\mu\text{m}$ ; said bead produced by a method comprising steps of:

- (a) preparing a suspension polymerization mixture in a vessel; said mixture comprising: (i) a monomer mixture comprising at least one vinyl monomer and 0.5 mole percent to 2 mole percent of at least one crosslinker; and (ii) from 0.25 mole percent to 1.5 mole percent of at least one free radical initiator;
- (b) removing oxygen from the suspension polymerization mixture and the vessel by introducing an inert gas for a time sufficient to produce an atmosphere in the vessel containing no more than 5 percent oxygen;
- (c) allowing the monomer mixture to polymerize; and
- (d) washing the bead with an aprotic organic solvent.